PLEASE **AMEND** THE CLAIMS AS FOLLOWS:

PLEASE **CANCEL** CLAIMS 2, 11, 24 AND 38.

1.   (Currently Amended) A router supporting Mobile IP for use with a mobile node which registers with the router, the router comprising:

a memory; and

a processor coupled to the memory,

wherein at least one of the memory or the processor provide:

(a) a mobility binding table associated with a Home Agent of the router, the mobility binding table having an entry associated with at least one mobile node that has registered with a Home Agent of the router, wherein the entry in the mobility binding table identifies a care-of address associated with the at least one mobile node and a physical interface on the router, thereby enabling packets addressed to a home address of the mobile node to be forwarded by the Home Agent of the router to the care-of address via the physical interface on the router, wherein the packets addressed to the home address of the mobile node do not identify the physical interface on the router; and

(b) a visitor table associated with a Foreign Agent of the router, the Foreign Agent being identified by the care-of address, the visitor table listing addresses of all mobile nodes being serviced by a Foreign Agent of the router, the mobile nodes including the at least one mobile node that has registered with the Home Agent of the router.

2.   (Cancelled)

3.   (Previously Presented)   The router as recited in claim 1, wherein at least one of the processor or the memory provide a routing table including an interface field that identifies a physical interface on the router.

4.   (Previously Presented))   The router as recited in claim 3, wherein the routing table is created without specifying tunnel interfaces to reach the mobile nodes.

5.   (Previously Presented))   The router as recited in claim 3, wherein the next hop field in the routing table specifies a home address associated with one of the mobile nodes.

6.   (Original)   The router as recited in claim 1, wherein the mobility binding table further includes a physical interface field associated with the at least one mobile node, the physical interface field specifying a physical interface on the router.

7.   (Original)   The router as recited in claim 1, wherein the mobility binding table is created without specifying a tunnel interface to reach the at least one mobile node.

8.   (Original)   The router as recited in claim 1, wherein the visitor table is created without specifying a tunnel interface to reach the Home Agent associated with one of the mobile nodes.

9.   (Currently Amended) A router supporting Mobile IP that enables intra-agent mobility by a mobile node, the router comprising:

a Home Agent having a routing table including an entry for the mobile node to enable the Home Agent to forward a packet to the mobile node and a mobility binding table associating the mobile node with a care-of address and a physical interface on the router upon registration with the Home Agent, thereby enabling packets addressed to a home address of the mobile node to be forwarded by the Home Agent to the care-of address via the physical interface on the router, wherein the packets are not addressed to the physical interface on the router; and

a Foreign Agent having a visitor table that lists an address of the mobile node to indicate that the mobile node has roamed to the Foreign Agent and is being serviced by the Foreign Agent, the Foreign Agent being identified by the care-of address, wherein the router enables the mobile node to roam to the Foreign Agent and receive packets addressed to the mobile node via the Home Agent after registering with the Home Agent.

10.	(Cancelled)

11.	(Cancelled)

12.	(Original)	The router as recited in claim 9, wherein the Home Agent is on a first interface of the router and the Foreign Agent is on a second interface of the router.

13.	(Original)	The router as recited in claim 9, wherein the routing table includes a physical interface field associated with the mobile node that specifies a physical interface on the router.

14.	(Original)	The router as recited in claim 9, wherein the routing table is created without specifying a tunnel interface to reach the mobile node.

15.	(Original)	The router as recited in claim 9, wherein the routing table includes a next hop field specifying a home address associated with the mobile node.

16.	(Original)	The router as recited in claim 9, wherein the mobility binding table includes a physical interface on the router associated with the mobile node.

17.	(Original)	The router as recited in claim 9, wherein the mobility binding table is created without specifying a tunnel interface to reach the mobile node.

18.	(Original)	The router as recited in claim 9, wherein the visitor table is created without specifying a tunnel interface to reach the Home Agent.

19.   (Currently Amended) A router supporting Mobile IP for use with a mobile node which registers with the router, the router comprising:

a memory; and

a processor coupled to the memory,

wherein at least one of the memory or the processor provide a visitor table, a mobility binding table, and a routing table, the routing table having an entry for one or more mobile nodes, a next hop field associated with each of the mobile nodes, and an interface field associated with the next hop field, the routing table enabling the router to forward a packet sent to one of the mobile nodes to a node identified by the next hop field via a link specified in the interface field, wherein the interface field in the routing table specifies a physical interface on the router, thereby enabling a packet addressed to a home address of one of the mobile nodes to be forwarded by a Home Agent of the router to a Foreign Agent of the router via the physical interface on the router, wherein the packet addressed to the home address of the mobile node does not identify the physical interface on the router.

20.   (Original)   The router as recited in claim 19, wherein the routing table is created without specifying tunnel interfaces to reach the mobile nodes.

21.   (Original)   The router as recited in claim 19, wherein the next hop field in the routing table specifies a home address associated with one of the mobile nodes.

22.   (Currently Amended) A router supporting Mobile IP for use with a mobile node which registers with the router, the router comprising:

a memory; and

a processor coupled to the memory,

wherein at least one of the memory or the processor provide a Foreign Agent, a Home Agent, and a mobility binding table of the Home Agent, the mobility binding table having an entry associated with at least one mobile node that has registered with the Home Agent of the router, wherein the entry in the mobility binding table identifies a care-of address associated with the at least one mobile node and a physical interface on the router, the physical interface being

associated with the at least one mobile node, thereby enabling packets addressed to a home address of the mobile node to be forwarded <u>by the Home Agent of the router</u> to the care-of address via the physical interface on the router<u>, the care-of address being associated with the Foreign Agent, wherein the packets are not addressed to the physical interface on the router</u>.

23.   (Original)   The router as recited in claim 22, wherein the mobility binding table is created without specifying a tunnel interface to reach the at least one mobile node.

24.   (Cancelled)

25.   (Currently Amended) <u>The router as recited in claim 54,</u> ~~A router supporting Mobile IP for use with a mobile node which registers with the router, the router comprising:~~

~~a memory; and~~

~~a processor coupled to the memory,~~

~~wherein~~ at least one of the memory or the processor <u>further including</u> ~~provide a Home Agent, a Foreign Agent and~~ a visitor table of the Foreign Agent, the visitor table listing addresses of all mobile nodes being serviced by the Foreign Agent of the router and lists physical interfaces on the router for one or more of the mobile nodes without specifying a tunnel interface to reach the Home Agent associated with the one or more of the mobile nodes such that the visitor table does not specify a tunnel interface for all the mobile nodes supported by the router.

26.   (Currently Amended) In a router supporting Mobile IP, a method of registering a mobile node visiting a Foreign Agent with a Home Agent, the method comprising:

receiving a registration request packet from the mobile node, the registration request packet specifying a Home Address and a care-of address;

determining from the registration request packet whether the router includes the Foreign Agent that the mobile node is visiting by ascertaining whether the care-of address specified in the registration request packet is equivalent to an address of the router;

determining from the registration request packet whether the router includes the Home

Agent with which the mobile node is registering; ~~and~~

if it is determined from the registration request packet that the router includes the Foreign Agent the mobile node is visiting and the Home Agent with which the mobile node is registering, registering the mobile node visiting the Foreign Agent of the router with the Home Agent of the router;

receiving a packet addressed to the Home Address of the mobile node from a corresponding node by the Home Agent of the router; and

forwarding the packet by the Home Agent of the router to the Foreign Agent of the router via a physical interface on the router;

wherein the packet received from the corresponding node does not identify the physical interface.

27.   (Original)   The method as recited in claim 26, wherein registering the mobile node is performed without creating a tunnel interface to reach the mobile node.

28.   (Original)   The method as recited in claim 26, wherein registering the mobile node is performed without creating a tunnel interface to reach the Home Agent.

29.   (Original)   The method as recited in claim 26, further comprising:

forwarding the registration request packet to the Home Agent if it is ascertained from the registration request packet that the router does not include the Home Agent, wherein the Home Agent is external to the router.

30.   (Currently Amended) In a router supporting Mobile IP, a method of registering a mobile node visiting a Foreign Agent with a Home Agent, the method comprising:

receiving a registration request packet, the registration request packet specifying a Home Address and a care-of address;

determining from the Home Address and the care-of address specified in the registration request packet whether the router includes the Foreign Agent and the Home Agent; ~~and~~

if it is determined that the router includes the Foreign Agent and the Home Agent, registering the mobile node with the Home Agent such that the care-of address and a physical interface are associated with the mobile node, thereby enabling packets addressed to the mobile node to be forwarded by the Home Agent of the router to the Foreign Agent of the router via the physical interface;

<u>receiving a packet addressed to the Home Address of the mobile node from a corresponding node by the Home Agent of the router; and</u>

<u>forwarding the packet by the Home Agent of the router to the Foreign Agent of the router via a physical interface on the router;</u>

<u>wherein the packet received from the corresponding node does not identify the physical interface.</u>

31.   (Original)   The method as recited in claim 30, wherein determining comprises:

ascertaining whether the router includes a Foreign Agent associated with the care-of address; and

ascertaining whether the router includes a Home Agent associated with the Home Address.

32.   (Currently Amended) In a router including a Home Agent having a Home Agent address and a Foreign Agent advertising a Foreign Agent address, the router supporting Mobile IP, a method of registering a mobile node visiting the Foreign Agent with the Home Agent, the method comprising:

receiving a registration request packet, the registration request packet specifying a Home Address and a care-of address, wherein the Home Address specified in the registration request packet is used to identify the Home Agent address associated with the router and the care-of address specified in the registration request packet is equivalent to the Foreign Agent address advertised by the router; ~~and~~

registering the mobile node visiting the Foreign Agent of the router with the Home Agent of the router such that packets addressed to the Home Address that are received by the Home Agent can be forwarded to the Foreign Agent via a physical interface on the router;

receiving a packet addressed to the Home Address of the mobile node from a corresponding node by the Home Agent of the router; and

forwarding the packet by the Home Agent of the router to the Foreign Agent of the router via a physical interface on the router;

wherein the packet received from the corresponding node does not identify the physical interface.

33.   (Original)   The method as recited in claim 32, wherein registering the mobile node includes:

updating a routing table with a physical interface on the router to enable the router to forward a packet to the mobile node via the physical interface.

34.   (Original)   The method as recited in claim 33, wherein updating the routing table is performed without creating or specifying a tunnel interface to reach the mobile node.

35.   (Original)   The method as recited in claim 32, wherein registering the mobile node includes:

updating a mobility binding table of the Home Agent with a care-of address associated with the mobile node and a physical interface associated with the mobile node to indicate that the mobile node has registered with the Home Agent via the care-of address, the physical interface being an interface on the router.

36.   (Original)   The method as recited in claim 35, wherein updating the mobility binding table is performed without creating or specifying a tunnel interface to reach the mobile node.

37.   (Original)   The method as recited in claim 32, wherein registering the mobile node includes updating a visitor table of the Foreign Agent to include an address of the mobile node to indicate that the mobile node is being serviced by the Foreign Agent and an associated physical interface on the router without creating or specifying a tunnel interface to reach the Home Agent.

38.   (Cancelled)

39.   (Currently Amended) The method as recited in claim 32 38, wherein forwarding the packet is performed without encapsulating or tunneling the packet.

40.   (Currently Amended) The method as recited in claim 32 38, wherein forwarding the packet is performed without creating a tunnel interface.

41.   (Original)   The router as recited in claim 1, wherein the Home Agent is associated with a first interface of the router and the Foreign Agent is associated with a second interface of the router.

42.   (Original)   The router as recited in claim 41, wherein the first interface is the second interface.

43.   (Original)   The router as recited in claim 41, wherein the first interface is different from the second interface.

44.   (Currently Amended) A computer-readable medium storing thereon computer-readable instructions executable by a computer for registering a mobile node visiting a Foreign Agent with a Home Agent in a router supporting Mobile IP, comprising:

~~instructions for receiving a registration request packet, the registration request packet specifying a Home Address and a care-of address;~~

instructions for determining from ~~the~~ a Home Address and ~~the~~ a care-of address specified in a ~~the~~ registration request packet whether the router includes the Foreign Agent and the Home Agent; ~~and~~

instructions for registering the mobile node with the Home Agent such that the care-of address and a physical interface of the router are associated with the mobile node if it is determined that the router includes the Foreign Agent and the Home Agent, thereby enabling packets addressed to the mobile node to be forwarded by the Home Agent of the router to the Foreign Agent of the router via the physical interface of the router;

instructions for forwarding a packet by the Home Agent of the router to the Foreign Agent of the router via a physical interface on the router;

wherein the packet is addressed to the Home Address of the mobile node and does not identify the physical interface on the router.

45. (Currently Amended) A router supporting Mobile IP and adapted for registering a mobile node visiting a Foreign Agent with a Home Agent, comprising:

means for receiving a registration request packet, the registration request packet specifying a Home Address and a care-of address;

means for determining from the Home Address and the care-of address specified in the registration request packet whether the router includes the Foreign Agent and the Home Agent; ~~and~~

means for registering the mobile node with the Home Agent such that the care-of address and a physical interface of the router are associated with the mobile node if it is determined that the router includes the Foreign Agent and the Home Agent, thereby enabling packets addressed to the mobile node to be forwarded by the Home Agent of the router to the Foreign Agent of the router via the physical interface of the router;

means for receiving a packet addressed to the Home Address of the mobile node from a corresponding node by the Home Agent of the router; and

means for forwarding the packet by the Home Agent of the router to the Foreign Agent of the router via a physical interface on the router;

wherein the packet received from the corresponding node does not identify the physical interface on the router.

46.   (Currently Amended) A computer-readable medium storing thereon computer-readable instructions executable by a computer for registering a mobile node visiting a Foreign Agent with a Home Agent in a router supporting Mobile IP, comprising:

~~instructions for receiving a registration request packet from the mobile node, the~~ ~~registration request packet specifying a Home Address and a care-of address;~~

instructions for determining from ~~the~~ a registration request packet whether the router includes the Foreign Agent that the mobile node is visiting by ascertaining whether ~~the~~ a care-of address specified in the registration request packet is equivalent to an address of the router;

instructions for determining from a Home Address of the registration request packet whether the router includes the Home Agent with which the mobile node is registering; and

instructions for registering the mobile node with the Home Agent of the router if it is determined from the registration request packet that the router includes the Foreign Agent the mobile node is visiting and the Home Agent with which the mobile node is registering; and

instructions for forwarding a packet by the Home Agent of the router to the Foreign Agent of the router via a physical interface on the router;

wherein the packet is addressed to the Home Address of the mobile node and does not identify the physical interface on the router.

47.   (Original)   The computer-readable medium as recited in claim 46, wherein registering the mobile node is performed without creating a tunnel interface to reach the mobile node.

48.   (Original)   The computer-readable medium as recited in claim 46, wherein registering the mobile node is performed without creating a tunnel interface to reach the Home Agent.

49.   (Original)   The computer-readable medium as recited in claim 46, further comprising:

instructions for forwarding the registration request packet to the Home Agent if it is ascertained from the registration request packet that the router does not include the Home Agent, wherein the Home Agent is external to the router.

50.   (Currently Amended) A router supporting Mobile IP adapted for registering a mobile node visiting a Foreign Agent with a Home Agent, comprising:

means for receiving a registration request packet from the mobile node, the registration request packet specifying a Home Address and a care-of address;

means for determining from the registration request packet whether the router includes the Foreign Agent that the mobile node is visiting by ascertaining whether the care-of address specified in the registration request packet is equivalent to an address of the router;

means for determining from the registration request packet whether the router includes the Home Agent with which the mobile node is registering; and

means for registering the mobile node with the Home Agent of the router if it is determined from the registration request packet that the router includes the Foreign Agent the mobile node is visiting and the Home Agent with which the mobile node is registering; and

means for forwarding a packet by the Home Agent of the router to the Foreign Agent of the router via a physical interface on the router;

wherein the packet is addressed to the Home Address of the mobile node and does not identify the physical interface on the router.

51.   (Original)   The router as recited in claim 50, wherein registering the mobile node is performed without creating a tunnel interface to reach the mobile node.

52.   (Original)   The router as recited in claim 50, wherein registering the mobile node is

performed without creating a tunnel interface to reach the Home Agent.

53. (Original)   The router as recited in claim 50, further comprising:

means for forwarding the registration request packet to the Home Agent if it is ascertained from the registration request packet that the router does not include the Home Agent, wherein the Home Agent is external to the router.

54. (Currently Amended) A router supporting Mobile IP adapted for registering a mobile node visiting a Foreign Agent with a Home Agent, comprising:

a processor; and

a memory, at least one of the processor or the memory being adapted for:

receiving a registration request packet from the mobile node, the registration request packet specifying a Home Address and a care-of address;

determining from the registration request packet whether the router includes the Foreign Agent that the mobile node is visiting by ascertaining whether the care-of address specified in the registration request packet is equivalent to an address of the router;

determining from the registration request packet whether the router includes the Home Agent with which the mobile node is registering; ~~and~~

if it is determined from the registration request packet that the router includes the Foreign Agent the mobile node is visiting and the Home Agent with which the mobile node is registering, registering the mobile node visiting the Foreign Agent of the router with the Home Agent of the router<u>; and</u>

<u>receiving a packet addressed to the Home Address of the mobile node from a corresponding node by the Home Agent of the router, and forwarding the packet by the Home Agent of the router to the Foreign Agent of the router via a physical interface on the router;</u>

<u>wherein the packet received from the corresponding node does not identify the physical interface.</u>

55. (Original)   The router as recited in claim 54, wherein registering the mobile node is

performed without creating a tunnel interface to reach the mobile node.

56.   (Original)   The router as recited in claim 54, wherein registering the mobile node is performed without creating a tunnel interface to reach the Home Agent.

57.   (Original)   The router as recited in claim 54, wherein at least one of the processor and the memory are further adapted for:

forwarding the registration request packet to the Home Agent if it is ascertained from the registration request packet that the router does not include the Home Agent, wherein the Home Agent is external to the router.